

## CLAIMS

1. A base station apparatus that transmits a multicarrier signal composed of a plurality of subcarriers, comprising:

- 5 a selection section that selects a mobile station for which a data channel is assigned to the plurality of subcarriers in accordance with channel quality of a control channel for transmitting control information necessary for data transmission on a data channel; and
- 10 an assignment section that assigns the data channel to the plurality of subcarriers in accordance with channel quality of the data channel, with a mobile station selected by the selection section as an object.

- 15 2. The base station apparatus according to claim 1, wherein the selection section selects mobile stations up to a possible number of multiplexing in the plurality of subcarriers in high-to-low order of the channel quality of the control channel.

- 20 3. The base station apparatus according to claim 1, wherein the selection section selects the mobile station for which the channel quality of the control channel is greater than or equal to a predetermined quality.

- 25 4. The base station apparatus according to claim 1, wherein the selection section selects the mobile station

for which the data channel is assigned to the plurality of subcarriers, in accordance with channel quality of a downlink control channel for transmitting data channel assignment information or MCS information.

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5. The base station apparatus according to claim 1, wherein the selection section selects the mobile station for which the data channel is assigned to the plurality of subcarriers, in accordance with channel quality of an uplink control channel for transmitting ACK or NACK.

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6. The base station apparatus according to claim 1, wherein the assignment section assigns the control channel to a predetermined subcarrier among the plurality of subcarriers.

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7. A mobile communication system in which a base station apparatus and a mobile station apparatus perform radio communication, wherein:

20 the base station apparatus receives channel quality information of a data channel from the mobile station apparatus; and

the mobile station apparatus determines whether or not to transmit the channel quality information to the base station apparatus, in accordance with channel quality of a control channel.

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8. The mobile communication system according to claim 7, wherein the mobile station apparatus determines that the channel quality information is to be transmitted when channel quality of the control channel is greater than  
5 or equal to a threshold value, and determines that the channel quality information is not to be transmitted when channel quality of the control channel is less than a threshold value.

10 9. The mobile communication system according to claim 7, wherein the mobile station apparatus measures channel quality using a reception SIR of the control channel.

15 10. The mobile communication system according to claim 7, wherein the mobile station apparatus measures channel quality using required transmission power of the control channel.

20 11. A scheduling method of a data channel for a plurality of subcarriers used in a multicarrier transmission system in which a multicarrier signal having the plurality of subcarriers in a frequency axis direction is transmitted continuously in a time axis direction, wherein time axis direction scheduling is performed according to channel  
25 quality of a control channel, and frequency axis direction scheduling is performed according to channel quality of a data channel.